AMENDMENTS TO THE CLAIMS

The following Listing of Claims will replace all prior versions and listings of claims in this application.

LISTING OF CLAIMS

1.   (Cancelled)

2.   (Currently amended) An apparatus according to claim [[1]] 11, wherein the sectional image represents a three-dimensional volume, and the corresponding three-dimensional baseline function is composed of separate two-dimensional baseline functions that are calculated for two-dimensional slices of the sectional image.

3.   (Cancelled)

4.   (Currently amended) An apparatus according to claim [[1]] 11, wherein the baseline function is determined by fitting a parametric model function to the data in the segmented areas.

5.   (Previously presented) An apparatus according to claim 4, wherein the parametric model function is a spline function or a polynomial, preferably a polynomial of sixth degree.

6.   (Currently amended) An apparatus according to claim [[1]] 11, wherein the baseline function is determined by low-pass filtering of the data in the segmented areas.

7.   (Currently amended) An apparatus according to claim [[1]] 11, wherein the baseline function is determined by a) spectral analysis of the sectional image or the segmented areas of the sectional image; b) composition of the baseline function from only the lower frequency components of the resulting spectrum.

8.   (Currently amended) An apparatus according to claim [[1]] 11, wherein image areas

outside the object are segmented and excluded from the correction with the baseline function.

9.   (Currently amended) An apparatus according to claim [[1]] 11, further comprising a rotational cone beam X-ray device for the generation of X-ray projections of an object.

10.   (Cancelled)

11.   (New) An apparatus for processing a sectional image of an object, the apparatus comprising a computer and an X-ray imaging apparatus, wherein the computer carries out the following transformations:

a) receiving into memory a sectional image reconstructed from X-ray projections of an object from different directions;

b) segmenting the sectional image by applying a gray value threshold thereby creating at least three segmented areas, wherein the gray value windows of the segmented areas correspond narrowly to the densities of bone, tissue, and air;

c) eroding the segmented areas at their boundaries;

d) determining a baseline function that describes spatially slowly varying artifacts of the sectional image based on the data of the segmented area corresponding to tissue;

e) resegmenting the baseline-fit region of the segmented area corresponding to tissue;

f) eroding the boundaries of the resegmented area; and

g) storing to the memory a corrected sectional image by compensating the original sectional image using the baseline function.

12.   (New) A method for processing a sectional image of an object, comprising:

a) providing in memory a sectional image reconstructed from X-ray projections of an object from different directions;

b) segmenting the sectional image by applying a gray value threshold thereby creating at least three segmented areas, wherein the gray value windows of the segmented areas correspond narrowly to the densities of bone, tissue, and air;

c) eroding the segmented areas at their boundaries;

d) determining a baseline function that describes spatially slowly varying artifacts of the sectional image based on the data of the segmented area corresponding to tissue;

e) resegmenting the baseline-fit region of the segmented area corresponding to tissue;

f) eroding the boundaries of the resegmented area; and

g) storing to the memory a corrected sectional image by compensating the original sectional image using the baseline function.

13.   (New) A computer memory comprising software for the steps:

a) receiving into memory a sectional image reconstructed from X-ray projections of an object from different directions;

b) segmenting the sectional image by applying a gray value threshold thereby creating at least three segmented areas, wherein the gray value windows of the segmented areas correspond narrowly to the densities of bone, tissue, and air;

c) eroding the segmented areas at their boundaries;

d) determining a baseline function that describes spatially slowly varying artifacts of the sectional image based on the data of the segmented area corresponding to tissue;

e) resegmenting the baseline-fit region of the segmented area corresponding to tissue;

f) eroding the boundaries of the resegmented area; and

g) storing to the memory a corrected sectional image by compensating the original sectional image using the baseline function.